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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,145

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EXAMINER

JAIN, RAJ K

ART UNIT

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2616

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/822,145	<b>Applicant(s)</b> YANG ET AL.	
	<b>Examiner</b> RAJ K. JAIN	<b>Art Unit</b> 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,8-12 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3, 5-7 and 13-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 2 and 11 are objected to because of the following informalities:  
Acronyms WFQ and SEFF in subject claims must be spelled out. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 14, 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The subject claims have terms (Qi, V(t), F/k-I) which are not properly described in the claims and/or specifications. Suggest elimination of terms not described in the claims and also from the specifications.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2 and 8-10 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shao et al (US 2004/0170186 A1).

Regarding claim(s) 1, Shao discloses a packet scheduling method (see abstract, Fig. 1) comprising: (a) classifying a stream according to at least one of a data rate and a length of a packet (Fig.1 incoming traffic streams are fed to classifier 120 and are separated according to specific types; paras 40, 43, 44); (b) if the packet of the classified stream is a first packet, storing the packet in a first stream queue, and if the packet of the classified stream is a subsequent packet, storing the packet in a second stream queue (packets are stored based on their classification paras 44, different packets are queued using different MCS levels); (c) counting a virtual start service time of the packet stored in the first stream queue according to a weighted fairness queuing method (Fig. 2, ref. 220 abstract, Para 29, virtual start time is determined for a packet); and (d) counting a virtual start service time of the packet stored in the second stream queue as a virtual start service time of the previous packet (Para 60 the virtual start time of next queued packet in second stream is same as virtual time of previous packet in the previous queue).

Regarding claim(s) 2, Shao discloses WF2Q or WF2Q+ algorithm (paras 44 and 93, while Shao only discloses WFQ, it is well known in the arts the WF2Q algorithms and its implementation which are similar to WFQ).

Regarding claim(s) 8, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream (paras 40-44).

Regarding claim(s) 9, Shao discloses the first stream queue of step Co) is classified according to a length of the packet of the stream (paras 40-44).

Regarding claim(s) 10, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream and a length of the packet (paras 40-44).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 11, 12 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shao et al (US 2004/0170186 A1) in view of Chiussi et al (USP 6,693,913 B1).

Regarding claim(s) 4, 11, Shao discloses a packet scheduling method and apparatus (see abstract, Fig. 1) comprising: (a) classifying a stream according to at least one of a data rate and a length of a packet (Fig.1 incoming traffic streams are fed to classifier 120 and are separated according to specific types; paras 40, 43, 44); (b) if the packet of the classified stream is a first packet, storing the packet in a first stream queue, and if the packet of the classified stream is a subsequent packet, storing the packet in a second stream queue (packets are stored based on their classification paras 44, different packets are queued using different MCS levels);

Shao fails to disclose a SEFF strategy. Chiussi discloses a SEFF strategy (col 3 lines 39-64, col 4 lines 16-27). Seff selector allows packet selection based on a minimum service timestamp among sessions and thus reducing backlogged flows.

Thus it would have been obvious at the time the invention was made to incorporate the teachings of Chiussi within Shao so as to maintain proper session flow amongst backlogged queues.

Regarding claim(s) 12, Shao discloses a virtual start service time of the packet stored in the first stream queue according to a weighted fairness queuing method, and further operable to count a virtual start service time of the packet stored in the second stream queue as a virtual start service time of the previous packet (Para 60 the virtual start time of next queued packet in second stream is same as virtual time of previous packet in the previous queue).

Regarding claim(s) 18, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream (paras 40-44).

Regarding claim(s) 19, Shao discloses the first stream queue of step Co) is classified according to a length of the packet of the stream (paras 40-44).

Regarding claim(s) 20, Shao discloses the first stream queue of step (b) is classified according to a data rate of the stream and a length of the packet (paras 40-44).

***Allowable Subject Matter***

Claims 3, 5-7, 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJ K. JAIN whose telephone number is (571)272-3145. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

***/Raj K. Jain/***

*Primary Examiner, Art Unit 2616*

March 20, 2008